Where are Government Agencies Sponsoring Blockchain Initiatives?

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Three Government imperatives are underpinning the vision of Blockchain

Open Government
As Government agencies increasingly collaborate with private sector and NGOs to drive economic growth and vitality, the need for transparency and trust in data becomes all the more important.

Cyber Security and Privacy
As cyber attacks on Government agencies increase, security of Government systems and data becomes fundamental to the Governments ability to provide safe communities and protected critical infrastructure.

Regulations and Compliance
Governments need to minimize regulations to enhance economic vitality while at the same time ensure regulatory compliance. Governments will not only create but also need to manage the implementation of policy changes at speed.
Production Blockchain Examples are Driving Key Design Patterns in Government Blockchain Discussions

Providing Value to Extended Business Network Participants:
we.trade

Creating a Shadow Chain to Tie into Legacy Systems:
IBM Global Finance

Digitizing the Global Supply Chain:
TradeLens

Extending the Business Network:
Global Food Trade
Where can Government Leverage Blockchain Capabilities?

Ledger
  • Dispute Resolution and Visibility

Supply Chain / Asset Management
  • Provenance

IoT Configuration
  • Security and Transparency

Data Sharing / Governance
  • Blockchain-based Access Control and Auditing

Registries
  • Digital Transformation/Digitization and Smart Contracts

Additive Manufacturing
  • Provenance and Visibility (including 3-D printing of Digital Assets)

Identity
  • Adding the value of blockchain to the Service Member

“And Blockchain”
  • Cognitive and Analytics to drive value for Business Network members
Designing a Blockchain Solution for Delaware’s Business Network
UCC Filings and Stock Ledger - Paths to Production

Month 1: Initial Proof of Concept
- Construct a full POC, building on the initial work completed, which addresses specific UCC pain points
- Build UCC Roadmap

Month 2-3: Full Proof of Concept
- Facilitate a Design Thinking session & construct an initial proof of concept (POC) environment with limited functionality
- Implement a production Blockchain on top of existing processes to mitigate process changes / risk, while gradually scaling up the number of entities participating

Month 4-11: Production Pilot
- Ongoing functionality updates

Month 12-18: Production Process Transformation
- Include UCC filing on the Blockchain as an alternative to traditional electronic or paper filing
- Introduce UCC process changes to further increase efficiency
CDC Use Case: EHR Reference Data Chain of Custody and Consent

What

• Track the chain of custody of the EHRs and how they are stored, accessed and moved through the lifecycle in compliance with specific governmental regulations
• Manage consent and sharing of EHRs

How

• Each participant agrees to capture the access and storage of EHR data on the blockchain via smart contracts
• Blockchain creates single view of the EHR reference data
• Include consent model so that owners of data can quickly and easily provide consent for others to access their data and then record consent to avoid dispute

Benefits

1. Easier to manage consent and share data
2. Improved data governance
3. Mitigate risk
4. More data, more frequently
5. Improved healthcare
6. Improved public health
Case Study: OPM Federal Employee HR Data Landscape with Blockchain
Employee Transfer – the Value of Blockchain to a Distributed Business Process

• Changes, Updates, and Historical Data
• Corrections and Errors
• Validation of Changes
• Access
• Forms
Hyperledger Fabric is the Blockchain for Business

- **Smart Contracts**: Business terms embedded in transaction database & executed with transactions.
- **Shared Ledger**: Append-only distributed system of record shared across business network.
- **Consensus**: All parties agree to network verified transactions that are committed when validated by endorsing nodes.
- **Audit**: Immutable, query-able ledger with user and timestamped updates makes auditing instant and trusted.
- **Privacy**: Ensuring appropriate visibility; transactions are secure, authenticated & verifiable.
- **Channels**: Allowing participants to share and view only what is pertinent to their transactions.
- **Access Controls**: Built-in access controls determine how blockchain participants audit, update, and interact with the ledger.
- **Private Data Collections**: A way to keep certain data and transactions confidential among a subset of channel members.
Useful Links

• Hyperledger Composer Playground - https://composer-playground.mybluemix.net/login
• Walmart + IBM Food Trust – http://www.youtube.com/watch?v=QWijlTDHLMQ&feature=youtu.be
• Food Safety Introduction - https://www.youtube.com/watch?v=SV0KXBxSoio&app=desktop
• Maersk Blockchain Supply Chain Use Case Introduction - https://www.youtube.com/watch?v=dcddYatMCGQ&app=desktop
• IGF Dispute Resolution Use Case Introduction - https://www.youtube.com/watch?v=0DSNdLDOZ5w&index=3
• IBM Blockchain video - https://www.youtube.com/watch?v=2O2CLoCxAWA
Thank You